

SORT MIDDLE, SCREEN SPACE, GRAPHICS GEOMETRY COMPRESSION THROUGH REDUNDANCY ELIMINATION

ABSTRACT OF THE DISCLOSURE

5 A geometry compression method for sort middle, screen space, graphics of the
standard graphics pipeline. The pipeline processes a 3D database having geometric
objects such as triangles and textures into a display image which may be shown to the
user on a display monitor. Lossless compression is achieved through redundancy
elimination. Triangles are processed following their transformation to screen space, so
10 that the vertex world 3D locations are determined in their projection to the screen 2D
locations. Triangles may also be processed by back projecting the screen space scanlines
to test locations against the world space triangles. The general technique is to identify the
portions of the data that have little or no effect on the rendered output and remove them
during compression. Specific examples disclosed include full packing, constant color,
15 delta coding, edge sharing, slope coding, and color quantization.